

Dr. GURDEEP RATTU

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ENTRY LEVEL ASSIGNMENTS

LECTURESHIP / RESEARCH & DEVELOPMENT / QUALITY ASSURANCE

Institute/ Industry/ Preference: Microbiology/ Sensors/ Food Safety/ Biotechnology/ Nanoscience/ Materials science

Google Scholar: Gurdeep Rattu, <https://scholar.google.com/citations?user=SfGahCYAAAAJ&hl=en&oi=ao>

ORCID ID: <https://orcid.org/0000-0001-8971-324X>

Scopus Author ID: 57190844749, <https://www.scopus.com/authid/detail.uri?authorId=57190844749>

Research Gate ID: https://www.researchgate.net/profile/Gurdeep_Rattu

LinkedIn ID: <https://www.linkedin.com/in/gurdeep-rattu-85792410a/>

PROFILE SUMMARY

- Senior Technical Officer (Microbiology)- National Horticultural Research and Development Foundation (NHRDF)
- Assistant Professor (Microbiology)- Biotechnology Department- Reva University, Bengaluru, India
- PhD completed in Label-free nanosensors development for food quality analysis, at BAS Dept., Physics lab, NIFTEM.
- Master of Science in Microbiology from Dept. of Microbiology, University of Delhi, South Campus, New Delhi.
- Efficient in gaining an understanding of various process technologies as well as undertaking research and development of new biological parameters; possesses a keen interest in Microbiology, Nanotechnology, Biosensors, Molecular Biology, Genetics, Analytical Chemistry, Environment, and Ecology.
- Exposure in carrying out quality analysis; effective in finding gaps amongst the processes and developing methods that are cost-effective and beneficial on an industrial scale. Possess sound technical writing skills.
- Pleasing youthful personality with a zest for life, knowledge, and understanding of technology.

EXPERIENCE

- 2022 Currently working as a Senior Technical Officer, (STO Microbiology) at National Horticultural Research and Development Foundation (NHRDF), Regional Research Station, RRS-Chitegaon, Nashik-422001, India
- 2022 Worked as Assistant Professor (Microbiology) - Biotechnology Department- Reva University, Bengaluru, India (From July 2022 to Nov 2022)
- 2015-22 As PhD Research Scholar- Patent published for nanosensors for food safety & quality from NIFTEM, Haryana

ACADEMIC DETAILS

- 2015-22 Ph.D. Research – Successfully defended Final Thesis Viva on 03/01/22 (Dept. of Basic and Applied Sciences) in Nanosensors for food quality (Patent) from the National Institute of Food Technology Entrepreneurship & Management, Kundli (NIFTEM-K)-Deemed to be university, under Ministry of Food Processing Industries, Govt. of India.
- 2017 UGC-CBSE NET QUALIFIED
- 2015 ICAR-ASRB NET QUALIFIED
- 2015 GATE QUALIFIED
- 2013-15 M.Sc. (Microbiology) from Dept. of Microbiology, University of Delhi, South Campus (first class)
- 2010-13 B.Sc. (Hons.) (Microbiology) from Bhaskaracharya College of Applied Sciences, University of Delhi (first class)
- 2010 12th from New Delhi, CBSE (first class)
- 2008 10th from New Delhi, CBSE (first class)

ACADEMIC ACHIEVEMENTS

- 2020 Awarded as Young Researcher Award (YRA) by Institute of Scholars (InSc) awards, Accredited by UASL
- 2020 Editorial Board Member in "American Journal of Nano Research and Applications (NANO); ISSN Print: 2575-3754
- 2020 Successfully completed international faculty development program (FDP), conducted by NIFTEM.
- 2019 FSMS, ISO-22000:2018 certified. Certificate No: NIFTEM/2019/29-30 04/084
- 2018 Qualified with AIR 24 in 1st Junior Food Analyst Exam conducted by FSSAI.
- 2015 Qualified "Graduate Aptitude Tease in Engineering" (GATE 2015) in Life Science
- 2015 Qualified ICAR-ASRB (Agricultural Scientists Recruitment Board) NET in Agricultural Microbiology (Lectureship)
- 2017 Qualified UGC-CBSE NET in Home Sciences (Lectureship)

SCHOLARSHIP AWARDED

2017 Awarded with UGC: MANF, JRF-SRF, Maulana Azad National Fellowship for PhD (2017-2022).
2015 Awarded with NIFTEM Ph.D. Fellowship for PhD (2015-17).

PUBLICATIONS:

Publication type	Online (printed)	In press (accepted)	Under process
Patent		1 (Filed & Published)	
Research paper	7	-	1
Review article	5	-	1
Book chapter	2	1	1

PATENT- (Filed- Indian Patent Application No. 202111001063)

Title: NANOPARTICLES BASED LABEL-FREE SENSOR DEVELOPMENT FOR L-LACTATE, LACTIC ACID, POLYLACTIC ACID (PLA) DETECTION

Principal investigator:

- 1) **Gurdeep Rattu**, Research scholar, BAS Dept., NIFTEM, gurdeep.r147@gmail.com ph.: 9015774228
- 2) **Dr. P. Murali Krishna**, (PhD Supervisor) Assistant Professor, Department of Basic and Applied Science, National Institute of Food Technology Entrepreneurship and Management (NIFTEM) (Deemed to be University, under MOFPI), Kundli, Haryana, India

Application No. 202111001063

Ref No T.I. (17)/ TIFA/2019 and Ref: AGG: APR: P_IN100935 (From RAHUL CHAUDHRY & PARTNERS)

Processed by Technology Information, Forecasting and Assessment Council (TIFAC). TIFAC is an autonomous organization set up in 1988 under the Department of Science & Technology (DST)

Indian patent application is filed (IP Application No. 202111001063, App. Number TEMP/E-1/1197/2021-DEL priority date 9th January, 2021) on the inventions disclosed in this manuscript.

Editorial Board Member

In recognition of the Editorial Board Member in

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American Journal of Nano Research and Applications

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Editorial Board

A.Dinesh Karthik

Department of Chemistry, Shanmuga Industries
Arts and Science College
Tiruvannamalai, India

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Department of Basic and Applied Science,
National Institute of Food Technology
Entrepreneurship and Management
Delhi, India

Mohammed Rasheed

Department of Applied Sciences, University of
Technology
Angers, Maine-Et-Loire, France

S Kalaiselvan

Department of Chemistry, SNS College of
Technology
Coimbatore, Tamilnadu, India

Dr. Gurdeep Rattu PUBLICATIONS

Cited by

	All	Since 2018
Citations	342	339
h-index	8	7
i10-index	5	5

Research Interest:

- ✓ Sensors, Materials science, Functional materials
- ✓ Microbiology, Fermentation, industrial applications
- ✓ Nanotechnology, Nanomaterials, Composites, Polymers
- ✓ Food safety & Quality Analysis, Environment sample
- ✓ Molecular biology, Biotechnology, rDNA technology, Enzymes, Cloning & Expression

Authors	Year	Article type	Journal	Publisher	Impact factor/NAAS
G Rattu, P Murali Krishna*	2023	Book chapter	Sustainable Agriculture Reviews	Academic Press	International Bookchapter
S Kumar, G Rattu, S Mitharwal, et al.,	2022	Review article	Journal of Food Processing and Preservation	Wiley	IF- 2.609
G Rattu, P Murali Krishna*	2022	Research article	Journal of Agriculture and Food Research	Elsevier	Q2 rated
G Rattu, P Murali Krishna*	2021	Research article	IEEE Transactions on Nanotechnology, IEEE TNANO	IEEE Xplore	IF- 2.967
G Rattu, P Murali Krishna*	2021	Research article	International Journal of Food Science and Technology, IJFST	Wiley	IF- 3.612
G Rattu, P Murali Krishna*	2021	Research article	Sensors and Actuators Reports, SNR	Elsevier	Q1 rated
MK Rayappa, PA Viswanathan, G Rattu, PM Krishna*	2021	Review article	Journal of Agricultural and Food Chemistry, J Agric Food Chem	American Chemical Society, ACS	IF- 5.895
G Rattu, N Khansili, VK Maurya, PM Krishna*	2021	Review article	Environmental Chemistry Letters, Environ Chem Lett	Springer	IF- 13.615
Y Lugani, S Oberoi, G Rattu*	2021	Book chapter	Sustainable Agriculture Reviews	Springer	International Bookchapter
N Khansili, G Rattu, A Kumar, PM Krishna*	2020	Conference article	Materials Today: Proceedings, Mater Today: Proc	Elsevier	Cite score- 1.8
G Rattu, N Khansili, PM Krishna*	2020	Research article	Current Nanoscience, Curr Nanosci	Bentham Science	IF- 1.824
N Khansili, G Rattu, PM Krishna*	2018	Review article	Sensors and actuators B: chemical	Elsevier	IF- 9.221
M Nayeem, G Rattu, R Dhaka, AK Kashyap, N Kumar, P Kumar*	2018	Book chapter	Novel Dairy Processing Technologies: Techniques, Management, and Energy Conservation	Apple Academic Press	International Book chapter
N Khansili, G Rattu*	2017	Research article	International Journal of Chemical Studies	© Chemical Studies	GIF: 0.565
Nayeem, K Chauhan, S Khan, G Rattu, RK Dhaka, H Siddiqui	2017	Research article	The Pharma Innovation Journal	TPI International Journal	NAAS Rating: 5.23
G Rattu, PM Krishna	2017	Review article	International Journal of Bio-Inorganic Hybrid Nanomaterials	Islamic Azad University -	GIF: 0.787
G Rattu, S Joshi, T Satyanarayana	2016	Research article	Extremophiles	Springer	IF- 3.035

Research Papers:

- [1] Gurdeep Rattu, and P. Murali Krishna* (2022) "Facile and rapid non-enzymatic colorimetric nanosensor for the detection of lactic acid in food analysis", *Journal of Agriculture and Food Research*, 7: 100268, Elsevier. <https://doi.org/10.1016/j.jafr.2022.100268>
- [2] Gurdeep Rattu & P. Murali Krishna* (2021). Highly selective and label-free AuNPs based optical sensor development significant in smartphone sensing of L-lactate in food samples. *IEEE: Transactions on Nanotechnology*, 20: 635-643. <https://doi.org/10.1109/TNANO.2021.3102705> (Impact factor- 2.57)
- [3] Gurdeep Rattu, and P. Murali Krishna * (2021) "Development of non-enzymatic ZnO nanocomposite based optical sensor for L-lactate detection in tomato samples", *International Journal of Food Science and Technology*, 56: 4328-4337, Wiley. <https://doi.org/10.1111/ijfs.15077> (Impact factor- 3.713)
- [4] Gurdeep Rattu, and P. Murali Krishna* (2021) "TiO₂ nanoparticles reagent based non-enzymatic label free optical sensor for rapid detection of L-lactate in apple juice", *Sensors and Actuators Reports*, 3: 100067, Elsevier. <https://doi.org/10.1016/j.snr.2021.100067>
- [5] Gurdeep Rattu, Nishtha Khansili and P. Murali Krishna * (2020) "Polyacrylic Acid Modified Cerium Oxide Nanoparticles: Synthesis and Characterization as a Peroxidase Mimic for Non-Enzymatic H₂O₂ Sensor", *Current Nanoscience* (2020) 16: 816. <https://doi.org/10.2174/1573413715666191204124329> (Impact factor- 1.836)
- [6] Nishtha Khansili, Gurdeep Rattu and P. Murali Krishna * (2018) "Label-free optical biosensors for food and biological sensor applications", *Sensors and Actuators B: Chemical*, 265: 35–49. <http://doi.org/10.1016/j.snb.2018.03.004> (Impact factor-7.46)
- [7] Mohammed Nayeem, Komal Chauhan*, Saif Khan, Gurdeep Rattu, Rohant Kumar Dhaka and Hamda Siddiqui (2017) "Optimization of low-cost substrate for the production of single cell protein using *Kluyveromyces marxianus*", *Pharma Innovation* 6(8): 22-25 (NAAS Rating: 5.03)
- [8] Nishtha Khansili and Gurdeep Rattu*, (2017) "A comparative study of hidden characteristics of canola & mustard oil". *International Journal of Chemical Studies*, 5(3): 632-5 (NAAS Rating: 5.31) Available from: <http://www.chemijournal.com/archives/?year=2017&vol=5&issue=3&ArticleId=580&si=false> (* corresponding author)
- [9] Gurdeep Rattu, Swati Joshi & T. Satyanarayana*, (2016) "Bifunctional recombinant cellulase–xylanase (rBhcell-xyl) from the polyextremophilic bacterium *Bacillus halodurans* TSLV1 and its utility in valorization of renewable agro-residues", *Extremophiles*, 20: 831–842. <https://doi.org/10.1007/s00792-016-0870-6> (Impact factor: 2.395)

Review articles:

- [10] Mirinal Rayappa, Kavya, K.S., Gurdeep Rattu, P. Murali Krishna* (2023). Metal-organic frameworks surface functionalization and bio/chemical sensors strategies for antibiotic residues detection in food, *RSC- Sustain. Food. Technol.* <https://doi.org/10.1039/d2fb00035k> (Royal Society of Chemistry- Sustainable Food Technology)
- [11] Sachin Kumar, Gurdeep Rattu, Swati Mitharwal, Abhishek Chandra, Sourabh Kumar, Aman Kaushik, Vijendra Mishra, Prabhat K Nema* (2022) "Trends in non-dairy-based probiotic food products: advances and challenges", *Journal of Food Processing and Preservation*, e16578, Elsevier. <https://doi.org/10.1111/jfpp.16578> (Impact factor- 2.19)
- [12] Gurdeep Rattu, Nishtha Khansili, V. K Maurya and P. Murali Krishna * (2020) "Lactate detection sensors for food, clinical and biological applications: a review", *Environmental Chemistry Letters* (2020). <https://doi.org/10.1007/s10311-020-01106-6> (Impact factor- 9.027)
- [13] Mirinal Kumar Rayappa, Priyanka A. Viswanathan, Gurdeep Rattu and P. Murali Krishna * (2021) "Nanomaterial based Sensors for Thermally Processed Food Contaminants: Acrylamide detection advances and outlook", *Journal of Agricultural and Food Chemistry ACS*, <https://doi.org/10.1021/acs.jafc.0c07956> (Impact factor- 5.279)
- [14] Gurdeep Rattu and P. Murali Krishna *, (2017) "Label-free electrochemical biosensors for food and drug application", *International Journal of Bio-Inorganic Hybrid Nanomaterials*, 6 (4): 185-203. Available from: http://ijbihn.iauvaramin.ac.ir/article_660055_34b04afa8593f08f1665d9a6a404dc89.pdf

Conference papers:

- [15] Nishtha Khansili, Gurdeep Rattu, Ankur Kumar and P. Murali Krishna * (2020) "Development of Colorimetric Sensor with Zinc Oxide Nanoparticles for Rapid Detection of Aflatoxin B1 in Rice", *Materials Today: Proceedings*, 21: 1846–1855. <http://doi.org/10.1016/j.matpr.2020.01.240>

Book Chapters:

- [16] Gurdeep Rattu, P Murali Krishna* (2023) Lactate biosensor for assessing milk microbiological load. Published in book: *Enzymes Beyond Traditional Applications in Dairy Science and Technology. Foundations and Frontiers in Enzymology 2023*, Pages 471-490, Academic Press. <https://doi.org/10.1016/B978-0-323-96010-6.00019-9>
- [17] Yogita Lugani, Simmi Oberoi, Gurdeep Rattu* (2021) Nanotechnology in Food Industry–Applications and Future Perspectives. In: Maurya V.K., Gothandam K.M., Ranjan S., Dasgupta N., Lichtfouse E. (eds) *Sustainable Agriculture Reviews 55*. Sustainable Agriculture Reviews, vol 55. Springer, Cham. https://doi.org/10.1007/978-3-030-76813-3_3
- [18] Mohammed Nayeem, Gurdeep Rattu, Rohant Dhaka, Ajay Kumar Kashyap, Nishant Kumar, Pramod Kumar (2018) *Novel Dairy Processing Technologies: Techniques, Management, and Energy Conservation*. Apple Academic Press, Taylor & Francis Group. <https://www.taylorfrancis.com/chapters/edit/10.1201/9781315167121-10/dairy-foods-allergy-intolerance-mohammed-nayeem-gurdeep-rattu-rohant-dhaka-ajay-kumar-kashyap-nishant-kumar-pramod-kumar>

Publications under process:

- [19] Gurdeep Rattu, and P. Murali Krishna* (2023) "Development of HfO₂ NPs-based optical sensor for biopolymer PLA detection", *Chemical Physics Letters*, Elsevier (Impact factor: 2.238- under revision).

RESEARCH EXPERIENCE:

- 2014-2015** MASTER'S THESIS PROJECT,
Organization: DEPARTMENT OF MICROBIOLOGY, UNIVERSITY OF DELHI SOUTH CAMPUS, NEW DELHI, INDIA.
PROJECT: **Cloning, sequencing, expression, production, purification & characterization of Bifunctional biocatalyst cellulase-xylanase (BhCell-Xyl) of polyextremophilic *Bacillus halodurans* TSLV1 and its application in saccharifying agro-residues.**
- 2015- 2022:** Ph.D. thesis defended- In Food-Nanotechnology (Nanosensors, Nanomaterials, Food Safety, Microbiology, Fermentation, Quality analysis)
Organization: National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Under MoFPI, Govt. of India.
Title- "Nanomaterial based non-enzymatic colorimetric sensor for the rapid detection of L-lactate/lactic acid/ polylactic acid (PLA) in food, pharma and packaging application" (Successfully defended on 3 Jan 2022)

PROJECTS COMPLETED

- Worked on "Heterologous Expression and Characterization of bifunctional biocatalyst Cellulase-Xylanase from *Bacillus halodurans* TSLV1 as part of M.Sc. dissertation under the guidance of Prof. Dr. T. Satyanarayana at the Department of Microbiology, University of Delhi South Campus, New Delhi [Dec'14-May'15].
- Synthesis and characterization (XRD/SEM/Zeta/DLS/UV-Vis/FT-IR) of metals/ metal-oxides/ lanthanides (Au/Fe/Cu/TiO₂/ZnO/CeO₂/HfO₂) nanomaterials, polymer coated nanomaterials for the detection of toxins, fermentation metabolites (lactate), lactic acid, allergens in food, environmental and biological sample applications.
- Label-free sensor development –
 - ✓ Fluorescent H₂O₂ sensor
 - ✓ Colorimetric Aflatoxin B1 sensor
 - ✓ UV Spectrometric Lactate sensor
 - ✓ Colorimetric lactic acid sensor
 - ✓ UV Spectrometric polylactic acid polymer for molecular weight estimation.

AWARD DETAILS

- Poster presented at 8th Indian Youth Science Congress, University of Mumbai Feb. 16-18, 2017. Rewarded with 2nd prize in poster presentation.



- Oral presentation and Poster presented, Sixth International Conference on Recent Advances in Composite Materials (ICRACM-2019), at IIT-BHU, Varanasi. Rewarded with 1st prize in poster presentation.



- Awarded as Young Researcher Award (YRA) by Institute of Scholars (InSc) awards, An ISO 9001:2015 certified Institute by International Accurate Certification, Accredited by UASL



CERTIFICATIONS & TRAININGS

- Attended Eight Days International author workshop on “Academic Writing and Publishing” in collaboration with the renowned publishers (Elsevier, Taylor and Francis, Cambridge University Press, Springer Nature, Brill, Oxford University Press, Emerald, and Wiley) held during 21-29 October 2021 organized by Manipur University Library.
- Successfully completed **International Faculty Development Program** on ‘Green Perspectives in Food Processing Sector’ by Department of FE and FST, NIFTEM from 5th to 21st October 2020 (**No: N/FDP2020/20065**).
- Qualified with **AIR 24** in 1st **Junior Food Analyst** Exam conducted by Food safety and standard authority of India (**FSSAI**).
- **Completed FSMS (ISO 22000:2018) work shop at NIFTEM on April 29-30, 2019.**
- Attended Author Workshop, jointly organized by NIFTEM & Elsevier September 20th, 2017 in NIFTEM (**Deemed to be university**, Under **MoFPI**-Ministry of Food Processing Industries, **Govt. of India**).
- Short term certificate course completed in “planning and designing of cold chain infrastructures” from 19-09-2016 to 30-09-2016, conducted by National Horticulture Board (NHB) in NIFTEM (**Deemed to be university**, Under **MOFPI**-Ministry of Food Processing Industries, **Govt. of India**).
- Certificate course, completed **five weeks summer training** from 15-06-2012 to 21-06-2012 in the **Department of Microbiology, University College of Medical Sciences, DU**.

CONFERENCES & WORKSHOPS:

S.NO.	Name of the conference	Period	Location`	Description
1	Nanobioteck- 2016-1st Annual Meeting of Indian Society of Nanomedicine	24-26 Nov 2016	AIIMS, Delhi, India	Co-authored presentation
2	8th Indian Youth Science Congress Focal theme “food in the anthropocene era”	16-18 Feb 2017	University of Mumbai, India	Poster presentation (Second prize)
3	International conference on Bio and nano technologies for sustainable agriculture, food, health, energy & industry	21-23 Feb 2017	GJUS&T, Hisar, India	Co-authored presentation
4	National Seminar on Biomedical Engineering, Food and Fermentation Technology	28 Mar 2017	Jamia Hamdard University, New-Delhi, India	Co-authored presentation
5	International Conference on Thin Films (ICTF-17) in collaboration of Indian Vacuum Society	13-17 Nov 2017	CSIR-National Physical Laboratory, New Delhi, India	Poster presentation
6	International Symposium on Functional Materials (ISFM -2018): Energy and Biomedical Applications	13-15 Apr 2018	Hotel Shivalikview, Chandigarh, India	Co-authored presentation
7	Sixth International Conference on Recent Advances in Composite Materials (ICRACM - 2019)	25-28 Feb 2019	Indian Institute of Technology BHU, Varanasi-221005	Oral & Poster presentation (First prize)
8	DAE Computational Chemistry Symposium (DAE-CCS) – BARC	7-9 Nov 2019	BARC, Mumbai, India	Poster presentation
9	The First Virtual Bilateral Conference on Functional Materials (BiC-FM)	8-9, Oct 2020	Finland-Russia	Poster presentation
10	2nd International Conference on Future Aspects of Sustainable Technologies (FAST 2.0)	20-21 Oct 2020	Central Institute of Technology Kokrajhar, India	Poster presentation

2016	1st Annual Conference & workshop of Indian Society of Nanomedicine, NANOBIOTECK 2016 in AIIMS, New Delhi.
2016	4 th International conference & Exhibition India Farm 2 Fork 2016, 14-15 December 2016 at PHD CHAMBER New Delhi.
2017	Poster presented at 8 th Indian Youth Science Congress, University of Mumbai Feb. 16-18, 2017 and Awarded with 2 nd Prize.
2017	Poster presented at National Seminar on Biomedical Engineering, Food and Fermentation Technology, Dept. of Food technology, Jamai Hamdard University on March 28, 2017.
2017	Poster presented, International conference of thin films, ICTF at National Physical Laboratory (NPL), New Delhi.
2018	Poster presented, International symposium on functional materials, ISFM at Hotel ShivilakeView, Chandigarh. Got Full paper selected and accepted for publication in Journal of Materials Today: Proceedings, Elsevier.
2019	Oral presentation and Poster presented, Sixth International Conference on Recent Advances in Composite Materials (ICRACM-2019), at IIT-BHU, Varanasi. Rewarded with 1 st prize in poster presentation.
2019	Poster presentation, The First DAE Computational Chemistry Symposium (DAE-CCS), Organized By Chemical Engineering Group Bhabha Atomic Research Centre (BARC), Trombay, Mumbai – 400085.
2020	Attended the webinar on the topic "Medical Devices & Diagnostics for Covid-19 Risk Mitigation and Case Management: Needs, Trends and Future of Innovation" held on 23 June 2020 at Bhaskaracharya College of Applied Sciences, University of Delhi.
2020	The participation of Mr. Gurdeep Rattu during the Online International webinar on title "PREDICTIVE MICROBIOLOGY IN FOOD SAFETY", held on 27th June 2020, organized by Department of Basic and Applied Sciences, NIFTEM is highly appreciated (No: N/BAS/OC/PR/406).
2020	Virtual webinar on 'Currents trends in the application of HPLC and GC-MS techniques for Food & Chemical Testing' on 4 th July, 2020 organized by AFST(I) Haldia Chapter.
2020	Online virtual poster presentation, The First Virtual Bilateral Conference on Functional Materials (BiC-FM), Finland-Russia on October 8-9, 2020.
2020	Poster presentation titled- Facile and rapid non-enzymatic colorimetric nanosensor for the detection of lactic acid in food analysis in 2nd International Conference on Future Aspects of Sustainable Technologies (FAST 2.0), Department of Chemistry, Central Institute of Technology Kokrajhar (Deemed to be University MHRD, Govt. of India), Kokrajhar, Assam, India, on 20-21 October 2020 in Virtual Platform Certificate No: FAST 2.0/PP/44.
2022	Organizing committee member in 2 nd International conference on global trends in applied sciences, medical and health sciences, held from 28-29, October 2022, at Reva University, Bangalore, Karnataka.

TECHNICAL SKILLS

- KNOWS BASIC MICROBIOLOGY (GRAM STAINING, ENDOSPORE STAINING, MOTILITY, CAPSULE STAINING)
- MAINTENANCE OF PURE CULTURE, SUBCULTURING, HANDLING OF PURE CULTURE
- POLYMERASE CHAIN REACTION (PCR)
- PLASMID & GENOMIC DNA ISOLATION
- NANOSTRUCTURE, COMPOSITES, FUNCTIONAL MATERIAL SYNTHESIS (NANOPARTICLES, NANOWIRES/ NANORODS)
- OPTICAL SENSORS, CHARACTERIZATION STUDIES
- FOOD TESTING AND ANALYSIS
- BIOSENSORS, CHEMOSENSORS, FOOD QUALITY ANALYSIS
- THERMAL ANALYSIS (DSC, TGA)
- SPECTROPHOTOMETRIC ASSAYS (UV, IR, FTIR)
- COLUMN CHROMATOGRAPHY, HAEMOCYTOMETER
- COMPETENT CELL PREPARATION & TRANSFORMATION
- SDS PAGE & ELECTROPHORETIC GEL ASSAY, MEDIA PREPARATION
- CAN HANDLE - CENTRIFUGE, ULTRAFILTRATION, SPEED VAC, PH METER, SHAKERS AND LAMINAR HOOD
- RESEARCH WRITING, SCIENTIFIC AND TECHNICAL WRITING.

EXTRACURRICULAR ACTIVITIES

October 21, 2016- Participated in fest event organized by Rajguru College of applied sciences, university of Delhi by the department of biomedical science and won 1st position.

February 27-28, 2015 -Participated in "4TH NATIONAL SCIENCE DAY SYMPOSIUM" for IDEA PRESENTATION, at UDSC and got 1st position.

February 27-28, 2014-Participated in "4TH NATIONAL SCIENCE DAY SYMPOSIUM" UDSC & got a certificate as well.

February 17, 2012 -Member of Microbiology Society- Sukshmjeev, of college & volunteer for MICROQUEST the microbiology festival of BCAS, DU.

2010-2011- Participated as Volunteer in "BLOOD DONATION CHAMP" organised by AIIMS.

2010-2011- Rewarded for securing IIIrd position in college BCAS during 1st year of B.Sc. Microbiology DELHI UNIVERSITY.

SOFT SKILLS

Sincerity, Punctuality, Determination, Learning Ability, Positive Attitude, Team spirit, Managing Relationships at Work.

HOBBIES:

Net surfing, travelling, music & watching movies.

PERSONAL DETAILS

Date of Birth: 20th March 1993
Contact Address: D-407, SECTOR-1, ROHINI, New Delhi – 110085, INDIA.
Languages Known: English, Hindi and Punjabi.
Contact: +919015774228, gurdeep.r147@gmail.com ; gurdeep.bcas@niftem.ac.in

DECLARATION:

I hereby declare that all the information furnished above about me is true to the best of my knowledge.

Dr. GURDEEP RATTU

Senior Technical Officer (Microbiology)

National Horticultural Research and Development Foundation (NHRDF)

Ph.D. (Nanosensors, Food Quality analysis, Microbiology, Functional materials)

Dept. of Basic and Applied Sciences

National Institute of Food Technology Entrepreneurship & Management (NIFTEM)

Under the Ministry of Food Processing Industries (MOFPI), Govt. of India

M.Sc., B.Sc. (Microbiology)

University of Delhi South Campus

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Referee details:

Referee 1

Dr. Prayaga Murali Krishna (PhD supervisor)

Assistant Professor (Physics)

National Institute of Food Technology Entrepreneurship and Management (NIFTEM),

(Deemed to be University (De-novo Category), An Autonomous organisation under Ministry of **Food Processing Industries, GOVERNMENT OF INDIA)**

Plot No. 97, Sector 56, HSIIDC Industrial Estate, **Kundli-131028, District-** Sonipat, (Near, New Delhi)
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website:

http://niftem.ac.in/site/Faculty_Details.aspx?name=Dr.Prayaga%20Murali%20Krishna&EmailId=mkprayaga.niftem@gmail.com&MenuID=114&menulevel=3

Referee 2

Dr. Swati Joshi

Scientist-B

ICMR - National Institute of Occupational Health (ICMR-NIOH)

Ahmedabad, India.

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swati.joshi05@icmr.gov.in

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